

Timing and Extent of Wurm-Wisconsinan Deglaciation and Subsequent Rebound in Antarctica

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Global models of late Pleistocene continental ice sheet collapse and sea-level variation have favored an extensive ice retreat of Antarctica since last glacial maximum (LGM) at 21 ka. These models also favor a collapse history that is substantially phase-lagged behind that of the Laurentide and Fennoscandian ice sheets. The equivalent eustatic sea-level rise since LGM due to Antarctic collapse is between 24-37 meters according to the 'ANT-' and 'ICE-' series produced by the Canberra and Toronto groups, respectively. This is largely in accord with the CLIMAP 'MAX' reconstruction proposed by *Denton and Hughes* [1981]. However, glacio-geomorphologists have recently been backing away from the 'MAX' reconstruction. While extensive ice core data now reveal that paleo-temperatures were, indeed, characteristic of a full Northern Hemispheric 'glacial' condition, they also show that accumulation rates were *not* significantly larger than at present (if in most of East Antarctica throughout the last 100,000 years). Such information, when coupled to new glacio-sedimentary dating of the grounded ice sheet in the Ross Embayment at LGM, leads to the conclusion that global geophysical models might require some revision. We investigate such new models and the possible implications for observable geodetic signatures, such as rebound-driven temporal variation in the Earth's low-order gravity field and in vertical crustal motions.

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